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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,898	07/23/2001	Yoshio Sugaya	211758US0	9196

22850 7590 10/24/2002

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EXAMINER

ZITOMER, FRED

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 10/24/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/909,898

Applicant(s)
Sugaya et al.

Examiner
Fred Zitomer

Art Unit
1713



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Jul 25, 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 1713

1.

This responds to the communication of July 25, 2002. The rejection of record based on double patenting is withdrawn in view of applicant's arguments. The rejections under 35 USC 103(a), both of record, are maintained for claims 1-9, 11 and 12 as stated below. A new rejection of claim 10 under 35 USC 103(a) is given in view of applicant's challenge to the taking of notice in the prior Office action. No claim is allowed.

2.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3.

Claims 1-4, 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al., US 5,759,373, taken with Tomoi et al., US 5,350,523.

Terada '373 teaches porous anion exchange membranes comprising strong base anion exchange resins, thermoplastic support polymers absent exchange groups and the instant amounts thereof [column 4, line 8 - column 5, line 12]. Vinylbenzyltrimethylammonium chloride and derivatives thereof, i.e. polymers in the class of and/or encompassing resins within instant formula (1), are disclosed [column 5, lines 4-11]. The membranes are useful in electrodialyzers [column 3, lines 63-65]. Tomoi teaches anion exchange resins within instant formulas (1) and (2) [Abstract; column 3, lines 9-51]. More directly, component "n" of Tomoi is 3-18 which corresponds to and encompasses instant components "A" [column 3, lines 33-39]. The resins are characterized by

Art Unit: 1713

enhanced thermal stability [column 3, lines 40-51]. It would have been obvious to prepare anion exchange membranes of the instant composition in the expectation of obtaining a separation component for electrodialytic devices because the required anion exchange resin, the thermoplastic support polymer and the suitability of the resultant composition for the intended disclosed purpose were all known at the time of the instant invention.

Applicant's arguments filed July 25, 2002 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In the present case:

- Tomoi '523 not Terada is relied upon to teach enhanced thermal stability when instant component A is C₃₋₈.

- the evidence relied upon in instant Comparative Example 3 to show criticality for the resins of present formula (1) is insufficient for not basing the comparison against the closest prior art relied upon, viz. Tomoi '523, to disclose the properties of said formula.

The argument that Terada fails to teach the present method of preparation from the monomers is not compelling for at least the following reasons:

- it is well settled that the patentability of a product rests with the actual product formed as opposed to the method by which it is formed and that applicant has the burden of establishing

Art Unit: 1713

an unobvious difference over the reference product. *In re Marosi*, 218 USPQ 289; *In re Thorpe*, 227 USPQ 964.

- contrary to the implication that Terada is limited to a solid state mixing procedure the reference clearly teaches a process based on the binder polymer in solution [column 5, lines 22-24].

- the Mc Donald reference relied upon to teach the present process claims teaches preparing membranes from the monomers as noted below.

4.

Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al., US 5,759,373, taken with Tomoi et al., US 5,350,523, as applied to claim 1-4,11 and 12 above, and further in view of MacDonald, US 5,045,171.

MacDonald teaches preparing membranes for electrodialysis apparatuses comprising a quaternary ammonium ion monomer [column 4, lines 52-59] and a thermoplastic support [column 8, lines 5-13] by mixing the two components and polymerizing the monomer [column 8, lines 13-24].

Applicant's arguments filed July 24, 2002 have been fully considered but they are not persuasive. The gist of said arguments is that the same traversal given to the prior rejection applies here as well. Further, applicant has challenged the taking of notice that the irradiation step of instant claim 10 is obvious. By way of reply the response given above to the prior rejection is deemed to apply and a new rejection has been given to claim 10 as stated below.

Art Unit: 1713

5.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Terada et al., US 5,759,373, taken with Tomoi et al., US 5,350,523, and further in view of MacDonald, US 5,045,171, as applied to claims 1-9, 11 and 12 above, and further in view of Akao, US 4,876,129, or Osterholtz, US 3,846,521, or Sata et al., US 4,169,023, or Saad et al., US 6,306,646, or Chau et al., US 4,775,474.

The patent literature is replete with references teaching irradiating thermoplastic polymers with electron beams or γ -rays to optimize properties such as crosslinking, diffusion, hydrophilicity, adhesion, permeability etc. See e.g. Akao [column 5, lines 35-59] or Osterholtz [column 1, lines 20-30] or Sata [column 16, lines 60-68] or Saad [column 1, lines 3-15] or Chau [column 4, line 14 - column 5, line 6; Example 1].

Applicant's arguments with respect to claim 10 have been considered but are moot in view of the new ground of rejection.

6.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 1713

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Zitomer whose telephone number is (703) 308-2461. The examiner can normally be reached Monday through Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful David Wu can be reached at (703) 308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 (before final) and (703) 872-9311 (after final).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-2351.



FRED ZITOMER, PhD
PRIMARY EXAMINER
ART UNIT 1713

Zitomer/fz
October 20, 2002